

On the morning of the 31st, a large area of high pressure, crested near Winnipeg, Manitoba, occupied the northern half of the country and pressure was low over the upper Rio Grande Valley. Cold-wave warnings were issued for Arkansas and were extended, on special observations, over southern Oklahoma, the northern and western portions of East Texas, and the southeastern portion of West Texas. The warning was generally verified. A cold wave occurred also in the northern portion of West Texas, for which special temperature and livestock warnings had been issued, the temperatures predicted being only slightly higher than the temperatures that occurred.

Northwest storm warnings were issued for the Texas coast at 3 p. m. on the 9th. Northerly winds, closely approximating the verifying velocity occurred.

Warnings for the norther that reached the Texas coast on the 19th were issued at 8.40 p. m. on the 18th and were extended the next morning along the Louisiana coast. For similar conditions on the 24th, northwest storm warnings were issued for the Texas coast at 9 p. m. of the 23d and small-craft warnings were displayed on the Louisiana coast the next morning. Small-craft warnings were displayed also on the Texas coast on the 3d and 29th.

Warnings for northerly gales at Tampico, Mexico, were issued on the 19th and 24th.

In addition to the cold-wave warnings, frost or freezing temperature warnings, mostly for the coast sections, were issued on the 1st, 8th, 9th, 10th, 11th, 21st, 25th, 26th, 27th, and 28th; these warnings were generally verified.—*R. A. Dyke.*

#### DENVER FORECAST DISTRICT

The month was cold and stormy, with frequent disturbances advancing southeastward across the district, followed by HIGHS of remarkable intensity. The most notable storm moved southeastward from eastern Washington during the 15th, taking the place of an area of high pressure that had occupied the Plateau region for about a week, while another HIGH of unusual strength covered the northeastern Rocky Mountain slope. The low decreased rapidly in intensity during the 17th and reached New Mexico on the night of that date. The area of high pressure overspread the entire Rocky Mountain region by the 19th, with its crest over western Wyoming, where the pressure increased to more than 31.2 inches, and temperatures below zero extended to southern Colorado and north-central Arizona on the morning of that date.

Warnings of cold waves were issued as conditions seemed to require on the dates and for the States and parts of States as shown in the exhibit below. These warnings were generally verified.

*Cold-wave warnings, Denver district, December, 1924*

Dates	Character of cold wave	Places
Dec. 6.....	Moderate.....	Arizona (except extreme southwest portion), Colorado, Utah (eastern and southern).
15.....	do.....	Colorado (eastern and central).
16.....	Severe.....	Colorado (eastern and central), northeast and extreme southeast New Mexico.
16.....	Moderate.....	Extreme west Colorado, northwest New Mexico, north-east Arizona, and Utah.
17.....	do.....	West Colorado, north New Mexico, east Utah.
17.....	Severe.....	New Mexico.
18.....	do.....	West Colorado and north New Mexico.
23.....	Moderate.....	West Colorado, north and west New Mexico, east Arizona, and south Utah.
26.....	Severe (?).....	Colorado (east and central).
27.....	do. (?).....	Colorado (east), and New Mexico (northeast).
30.....	Moderate.....	Colorado (northeast and southeast), Utah (southwest).
31.....	do.....	Colorado (west), New Mexico (north and extreme east), Arizona (east), Utah (southeast).

Livestock warnings were issued on the 6th for Colorado, Arizona, except the extreme southwest portion, and Utah; on the 23d for western Colorado, northern and western New Mexico, eastern Arizona and southern Utah; on the 30th for eastern Colorado and southwestern Utah. The warnings were generally justified, except those for southern Arizona on the 6th.

The followings warnings of frost and freezing temperature were issued for southern Arizona: 3d, 4th, 7th, 9th, 10th, 11th, 17th, 20th, and 21st, frost south-central and southeast portions; 18th and 31st, frost south, freezing temperature south-central and southeast portions; 19th, freezing temperature south-central, frost extreme southwest portions; 23d, 26th, and 29th, frost south portion; 24th, 25th, and 27th, frost extreme southwest, freezing temperature south-central and southeast portions. These warnings were generally verified.—*J. M. Sherier.*

#### SAN FRANCISCO FORECAST DISTRICT

Abnormal weather conditions prevailed in the San Francisco forecast district during the month of December, 1924. Marked changes occurred in rapid succession, especially from the 8th to the 26th, inclusive. To understand the cause of this period of extraordinary weather, it is necessary to examine daily graphs of both pressure and temperature at stations in Alaska and at Honolulu. A study of these will disclose the fact that there was a constantly falling pressure at Honolulu from the 5th to a minimum on the 15th, and a gradual rise thereafter until the close of the month. There was a rise to above normal pressure over Bering Sea at the end of November, and the pressure continued above normal over that area until the 25th. Over Alaska proper the pressure was normal during the first 10 days of the month, decidedly above normal from the 11th until the 27th, and below normal thereafter. The peaks of highest pressure, which approximated 31 inches, occurred at most Alaska stations on the 14th and 15th and again on the 20th and 21st, over British Columbia on the 23d, and over Idaho on the 25th. The graphs of temperature show a decided change to lower temperatures at Alaska stations to a minimum for the month between the 11th and 15th. This polar air made its appearance over British Columbia on the 15th and moved thence southward, enveloping the whole Pacific slope during the following 48 hours. Temperatures continued decidedly below normal thereafter on the Pacific slope until after the 27th, when a marked rise overspread this region.

The following special forecasts and warnings were issued during the month: (a) On the 5th, for heavy snows in the Sierra Nevada during the next 24 hours; (b) on the 15th, livestock warnings were issued for eastern Washington, eastern Oregon, Idaho, and Nevada for snow, strong north winds, and much colder for the next two or three days; and (c) cold-wave warnings issued for the same section for temperatures much below freezing during the next 36 hours, and for freezing temperatures in northern and central California in 48 hours; (d) cold-wave warnings were issued on the 16th, in eastern Oregon, southern Idaho and Nevada for temperatures of zero or below in the next 36 hours; and (e) warnings in the citrus belt of southern California for much lower temperature for the next three days, when firing would be necessary; (f) on the 19th, special warnings in California, also given to the press associations, for increasing cloudiness with rising temperature probably followed by rain in California and snow turning to rain in Washington and Oregon in the next 24 to 36 hours; (g) on the 26th, a warning for unsettled